

FIG. 1

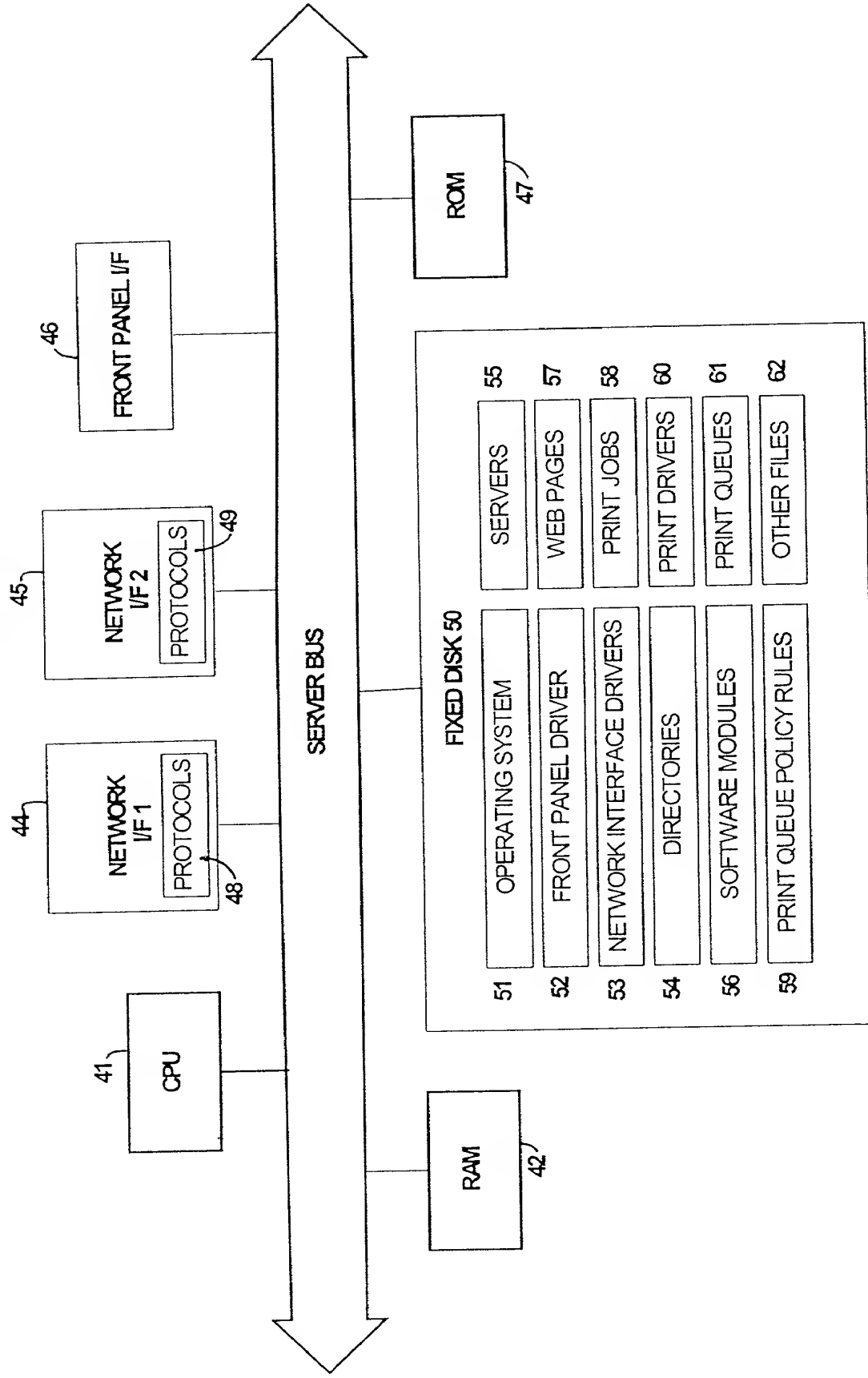


FIG. 2

DIRECTORIES 54

70

Device Management Directories

71

Print Queue Configuration Directory

72

Services Directories

FIG. 3

SERVERS 55

DHCP SERVER

WEB SERVER

PRINT SERVER

SNMP AGENT

75

76

77

78

FIG. 4

SOFTWARE MODULES 56

80 DHCP Listening Module

81 Virtual Device Modules

82 Functional Application Modules

83 Print Queue Service Module

84 Discovery Module

85 Print Queue Service Manager Module

87 Discovery Service Manager Module

Fig. 5

WEB PAGES 57

86 ~ Network Configuration Web Page

88 ~ Queue Service Web Page

89 ~ Print Queue Web Page

Fig. 6

DEVICE MANAGEMENT DIRECTORY 70

ENTRY 90	MAC ADDRESS 91	PRINT DEVICE TYPE 92	IP ADDRESS 93	NETWORK CONFIGURATION INFORMATION 94
Entry 1	00:00:85:69:0A:B3	Canon Laser	129.65.220.8	Domain Name, etc.
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
Entry N	-	--	--	--

Fig. 7

PRINT QUEUE CONFIGURATION DIRECTORY 71

	IP ADDRESS 100	MAC ADDRESS 101	PRINT QUEUE NAME 102	PRINTING CAPABILITIES 103	SERVER 105
ENTRY 1	129.65.220.8	00:00:85:69:0A:B3	Canon Laser	Color, Letter, A4	Main A
--	--	-	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
ENTRY N	-	--	-	--	--

Fig. 8

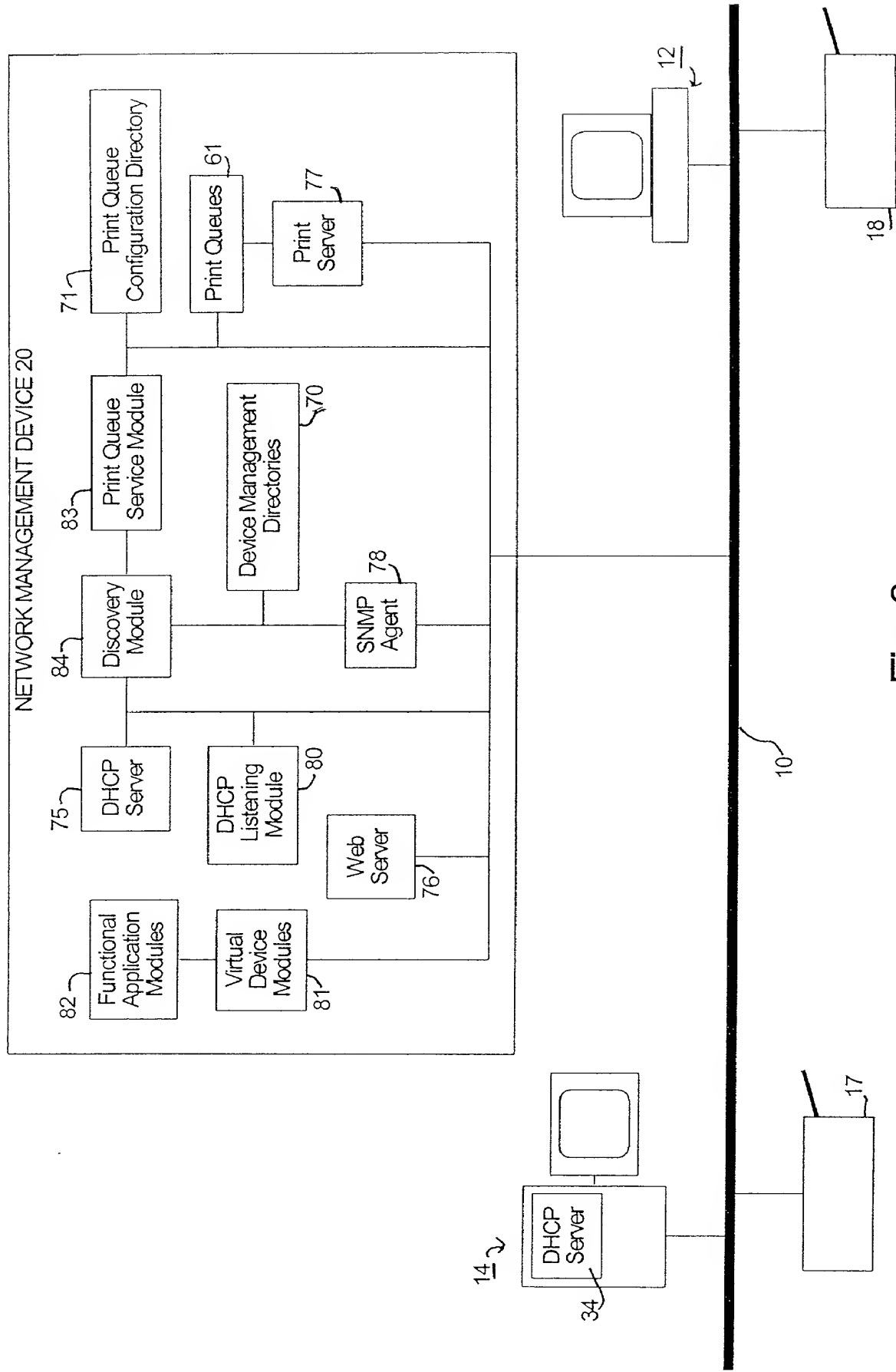


Fig. 9

FUNCTIONAL APPLICATION MODULES 82

110 — PRINT JOB ACCOUNTING APPLICATION MODULE

111 — PRINT JOB POLICY MANAGEMENT APPLICATION MODULE

112 — PRINTING DEVICE MANAGEMENT APPLICATION MODULE

114 — PRINTING DEVICE DRIVER UTILITY

115 — SECURE PRINT JOB APPLICATION MODULE

Fig. 10

FIG. 10
SERVICES DIRECTORIES 72

120

LOCAL SERVICES DIRECTORY			
¹²² SUBNET ID	¹²⁴ SERVICE	¹²⁵ NMD ID	
1	DISCOVERY	NMD 1	
1	PRINT QUEUE	NMD 2	

121

GLOBAL SERVICES DIRECTORY			
¹²² SUBNET ID	¹²⁴ SERVICE	¹²⁵ NMD ID	
1	PRINT QUEUE	NMD 1	
1	DISCOV. SERV. MGR.	NMD 3	
1	GLOBAL INFO SERV.	NMD 1	

FIG. 11

GLOBAL SERVICES DIRECTORY 121

¹²² SUBNET ID	¹²⁴ SERVICE	¹²⁵ NMD ID
1	MASTER	NMD 1
1	DISC. SERV. MGR.	NMD 3
1	GLOBAL INFO SERV.	NMD 1
1	PRINT QU. SERV. MGR.	NMD 3
.		
.		
.		
.		

FIG. 12

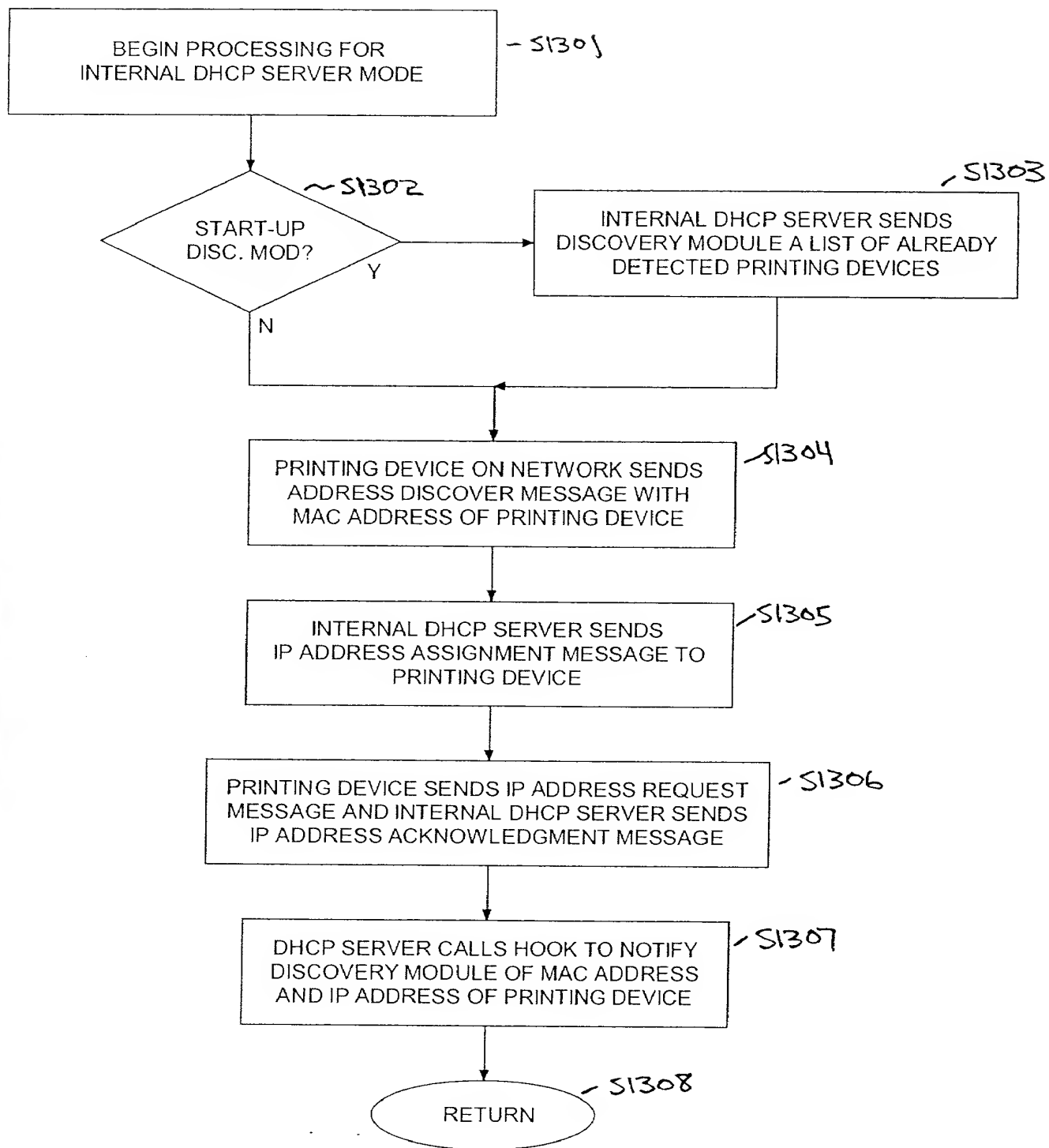
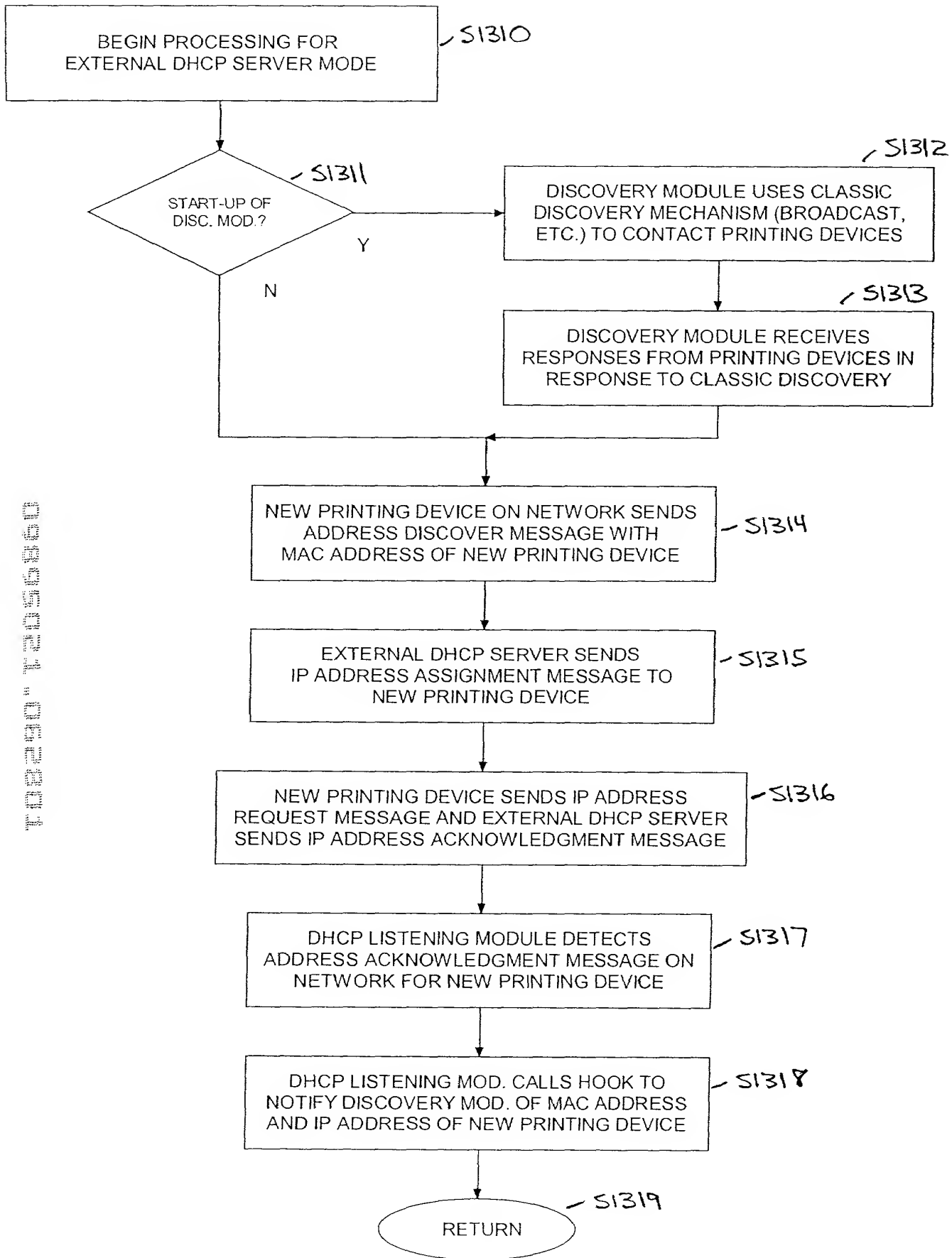


FIG. 13A



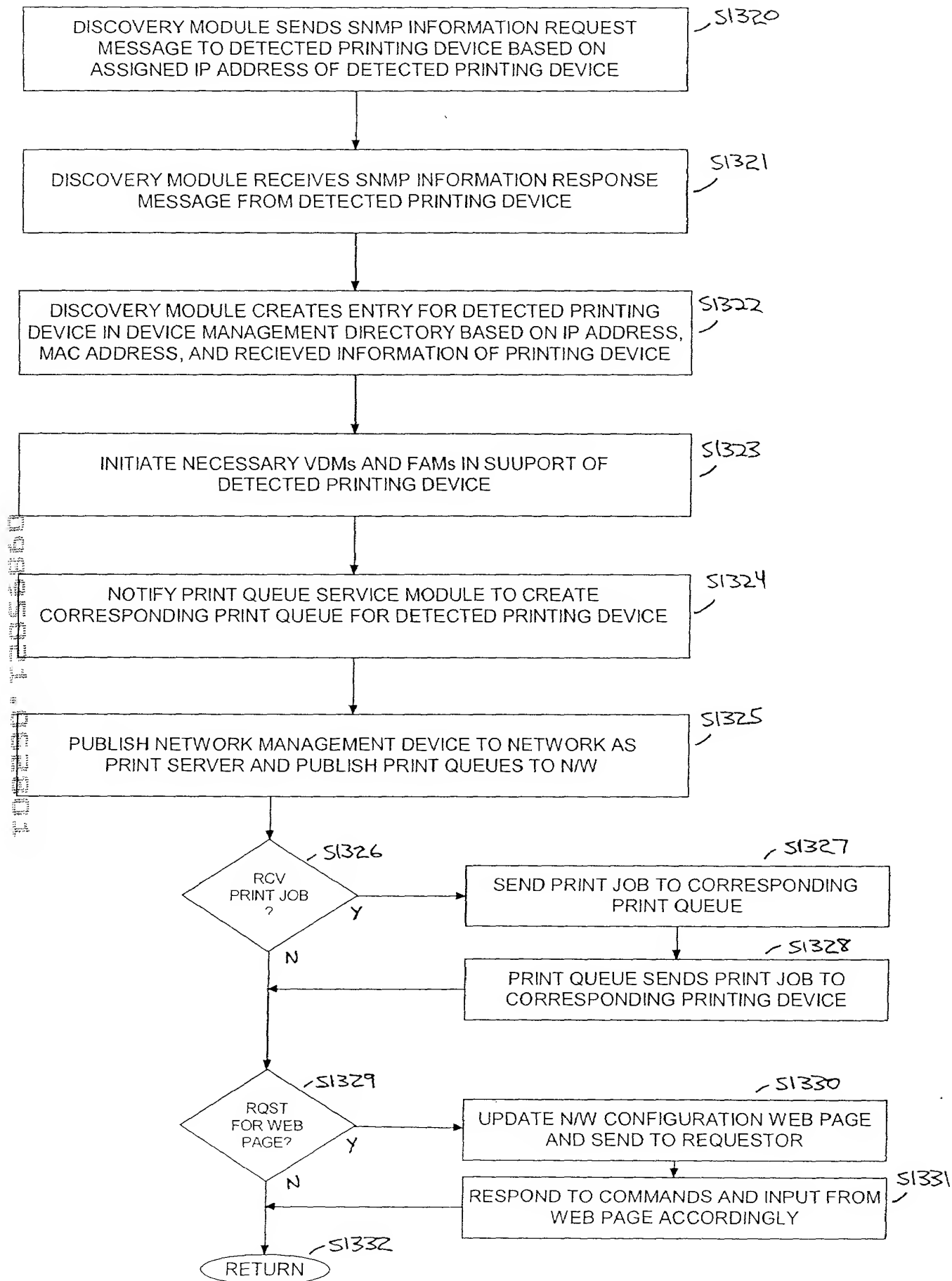


FIG. 13C

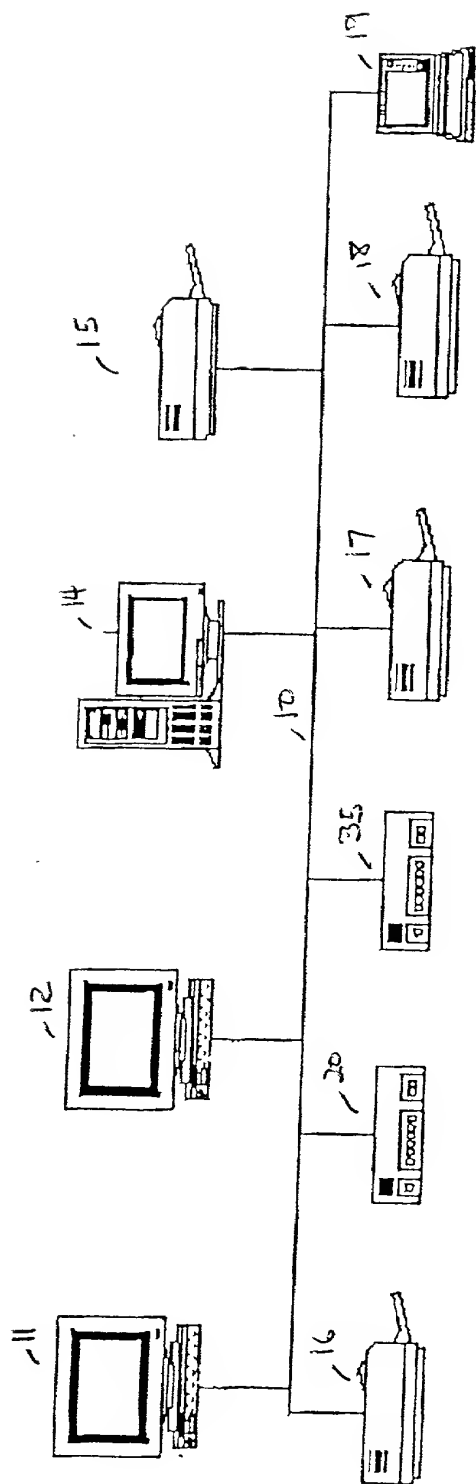
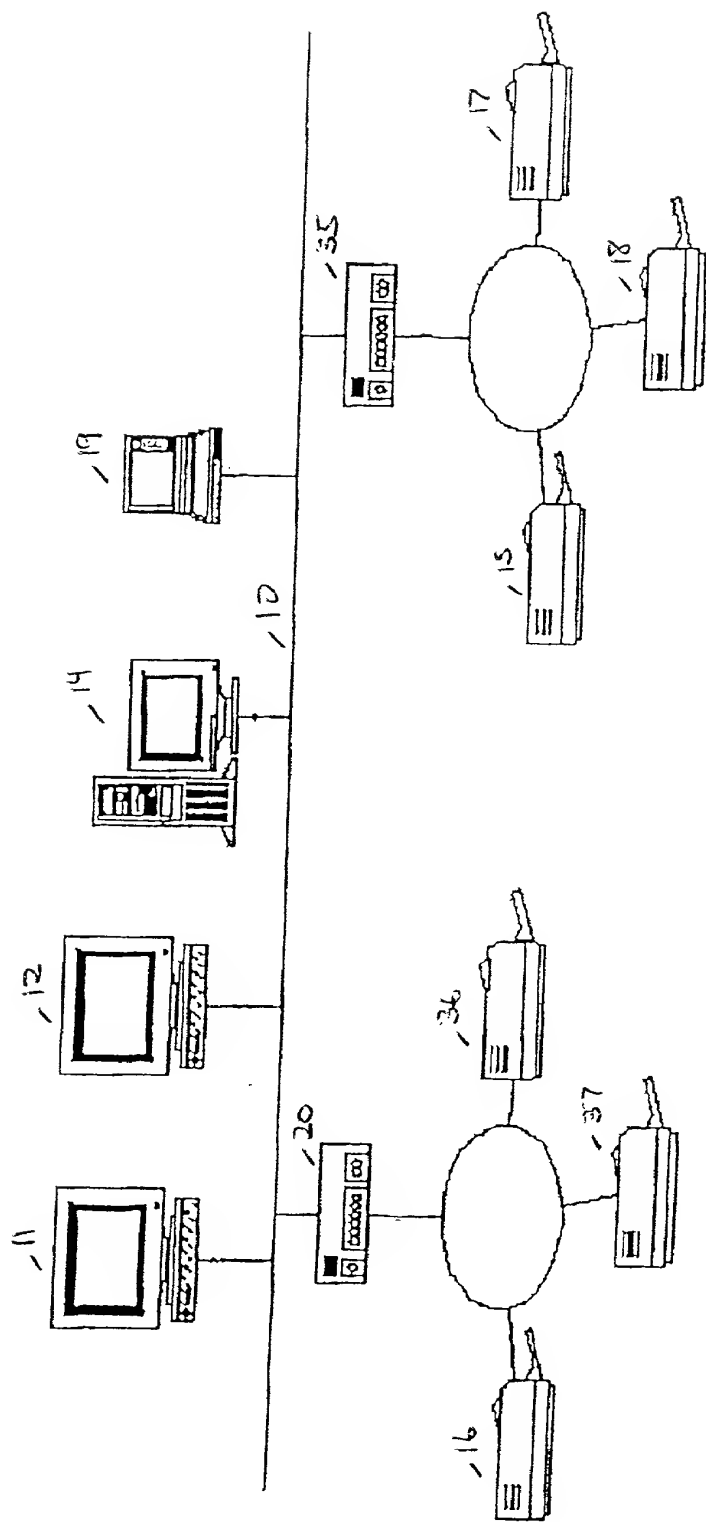


FIG. 14



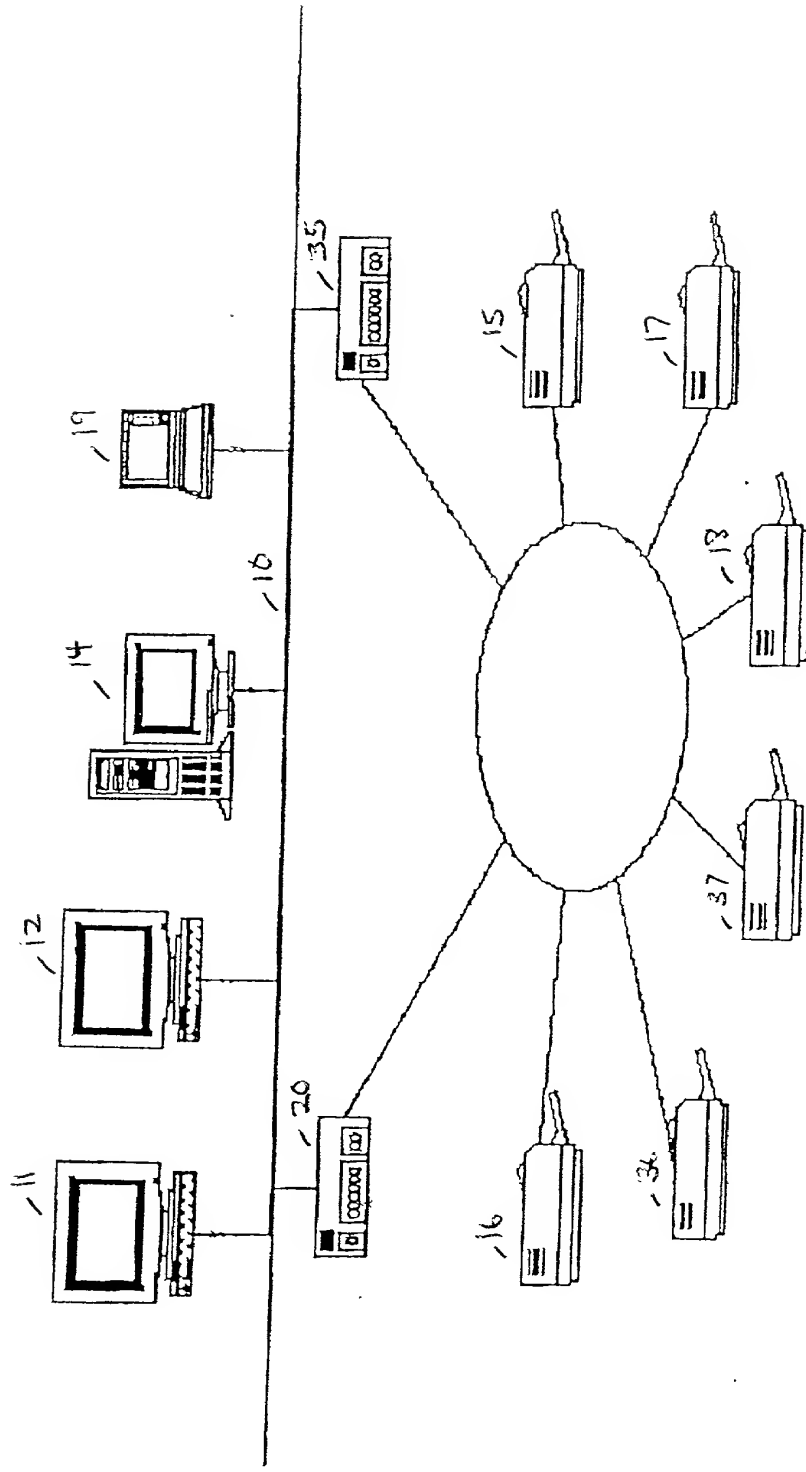


FIG. 16

FIG. 17

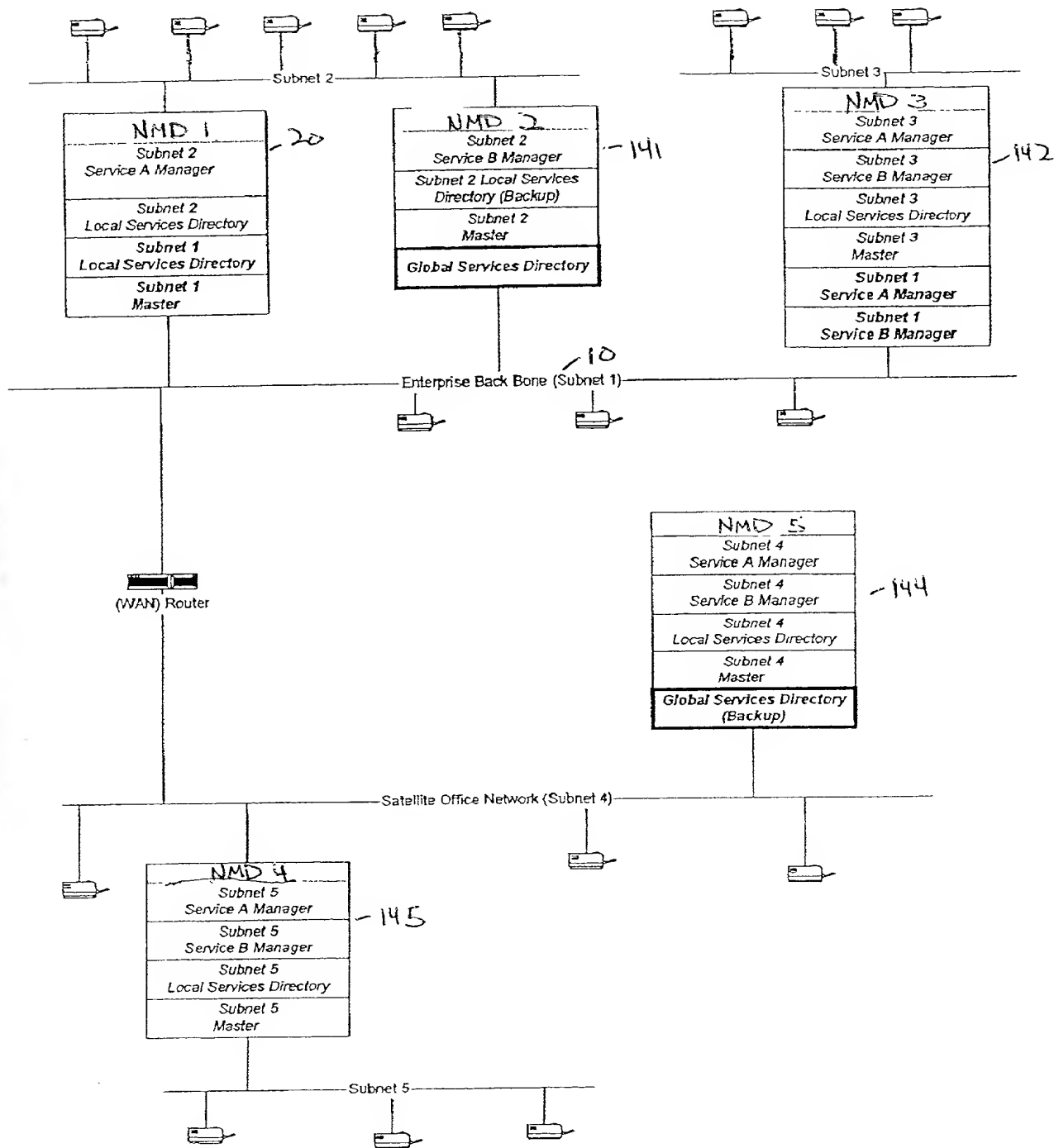


FIG. 17

NMD 1			26
Subnet	Component	State	
1	Printer QUE Service	Not Running	
1	Discovery Service	Not Running	
1	Local Services Directory	Running	
1	Master	Running	
2	Printer QUE Service	Running	
2	Discovery Service	Not Running	
2	Local Services Directory	Running	
2	Master	Not Running	
	Global Services Directory	Not Running/Backup	
NMD 2			141
Subnet	Component	State	
1	Printer QUE Service	Not Running	
1	Discovery Service	Not Running	
1	Local Services Directory	Not Running/Backup	
1	Master	Not Running	
2	Printer QUE Service	Not Running	
2	Discovery Service	Running	
2	Local Services Directory	Backup	
2	Master	Running	
	Global Services Directory	Running	
NMD 3			142
Subnet	Component	State	
1	Printer QUE Service	Running	
1	Discovery Service	Running	
1	Local Services Directory	Not Running/Backup	
1	Master	Not Running	
3	Printer QUE Service	Running	
3	Discovery Service	Running	
3	Local Services Directory	Running	
3	Master	Running	
	Global Services Directory	Not Running/Backup	
NMD 4			145
Subnet	Component	State	
4	Printer QUE Service	Running	
4	Discovery Service	Running	
4	Local Services Directory	Running	
4	Master	Running	
	Global Services Directory	Backup	
NMD 5			144
Subnet	Component	State	
4	Printer QUE Service	Not Running	
4	Discovery Service	Not Running	
4	Local Services Directory	Not Running/Backup	
4	Master	Not Running	
5	Printer QUE Service	Running	
5	Discovery Service	Running	
5	Local Services Directory	Running	
5	Master	Running	
	Global Services Directory	Not Running/Backup	

FIG. 18

FIG. 19

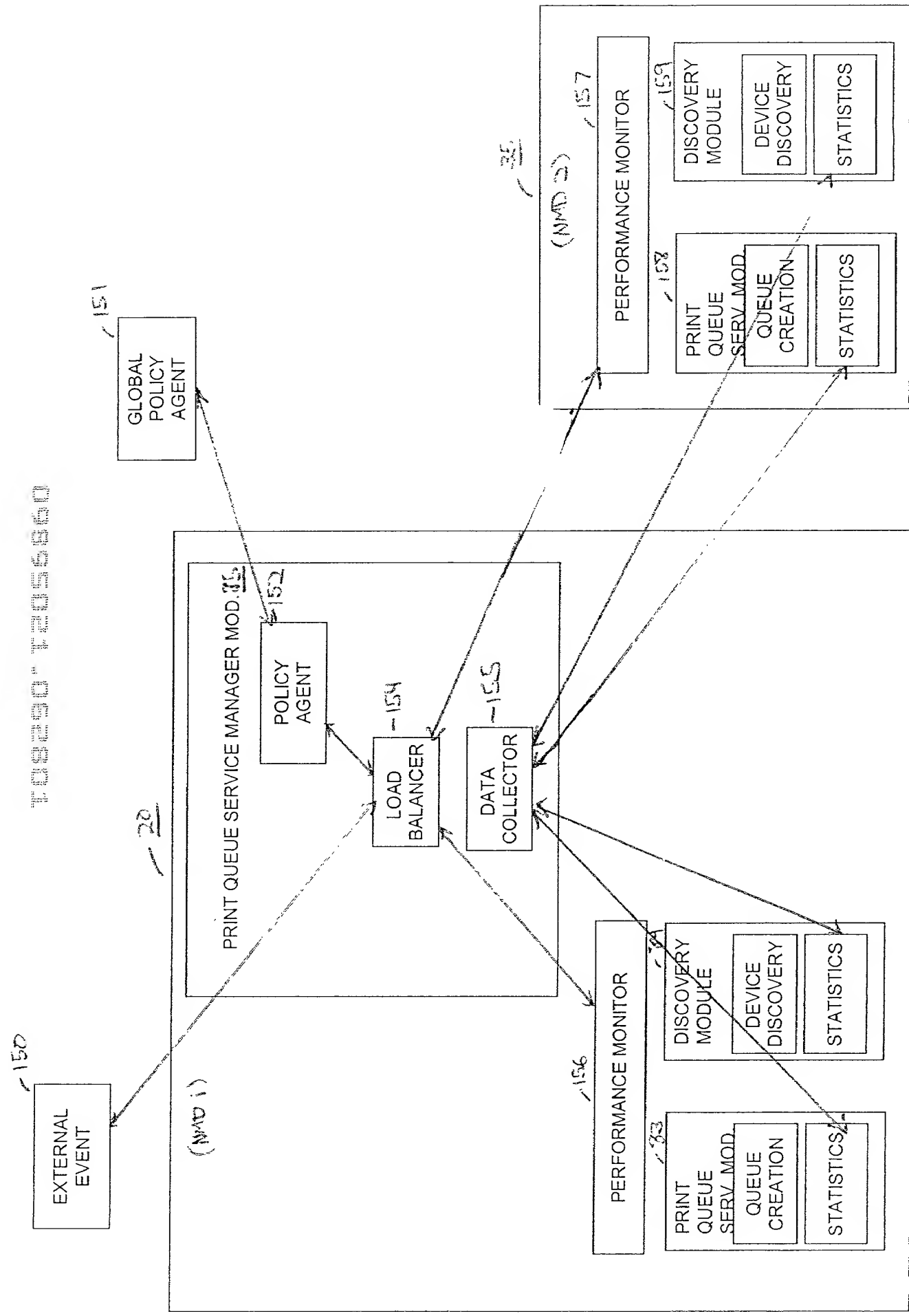


FIG. 19

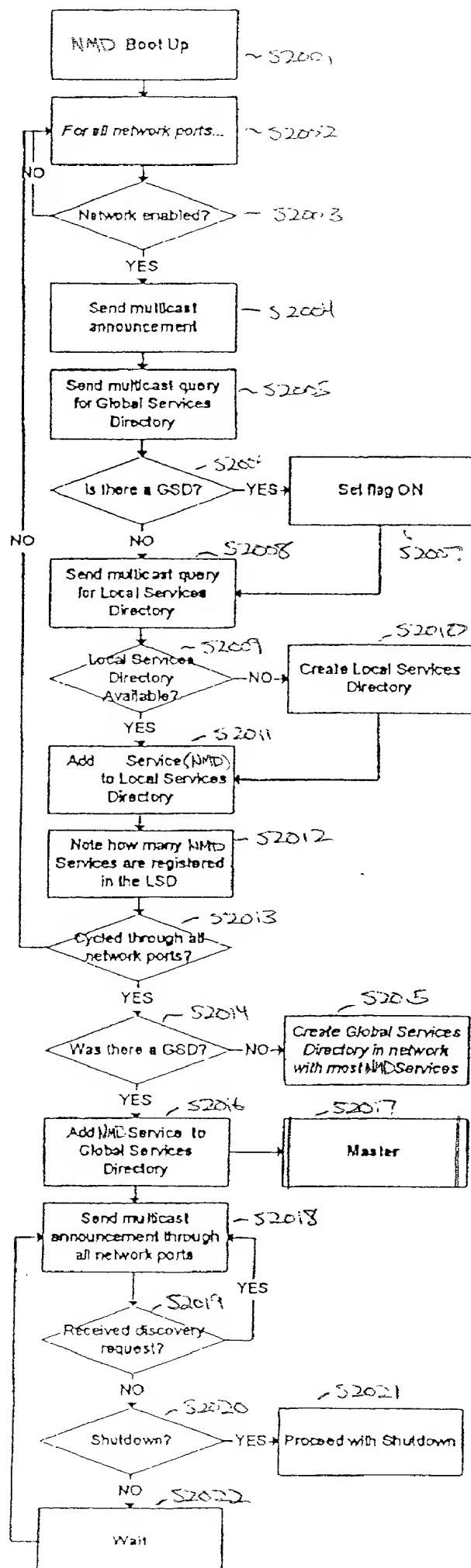


FIG. 20

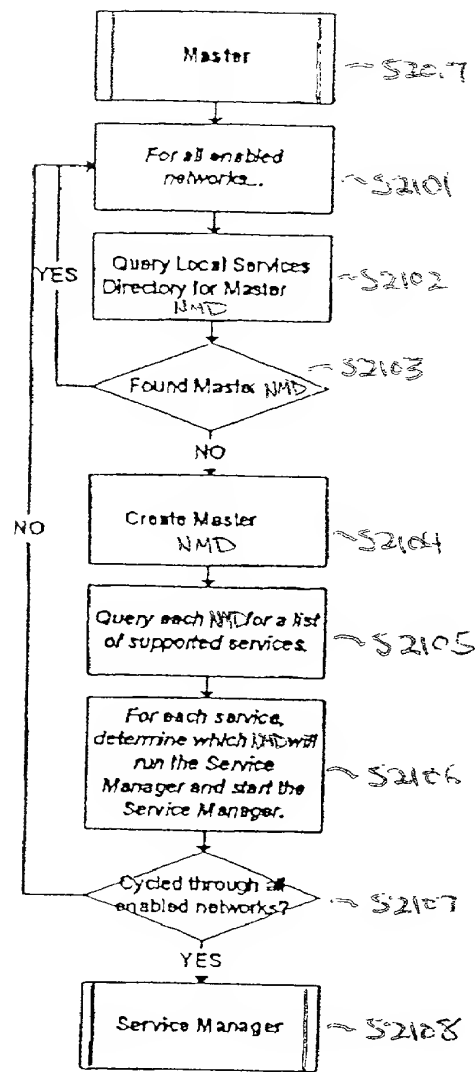


FIG. 21

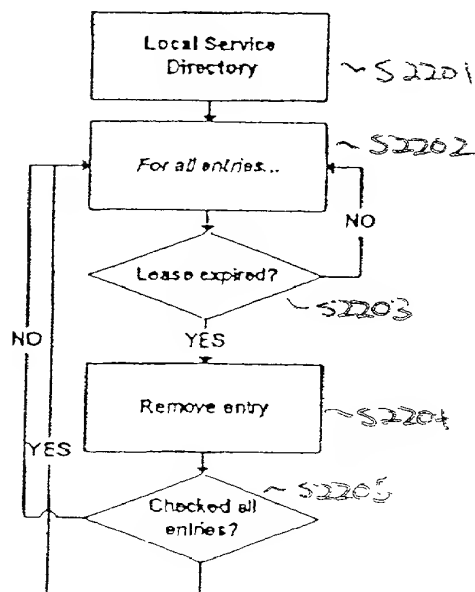


FIG. 22

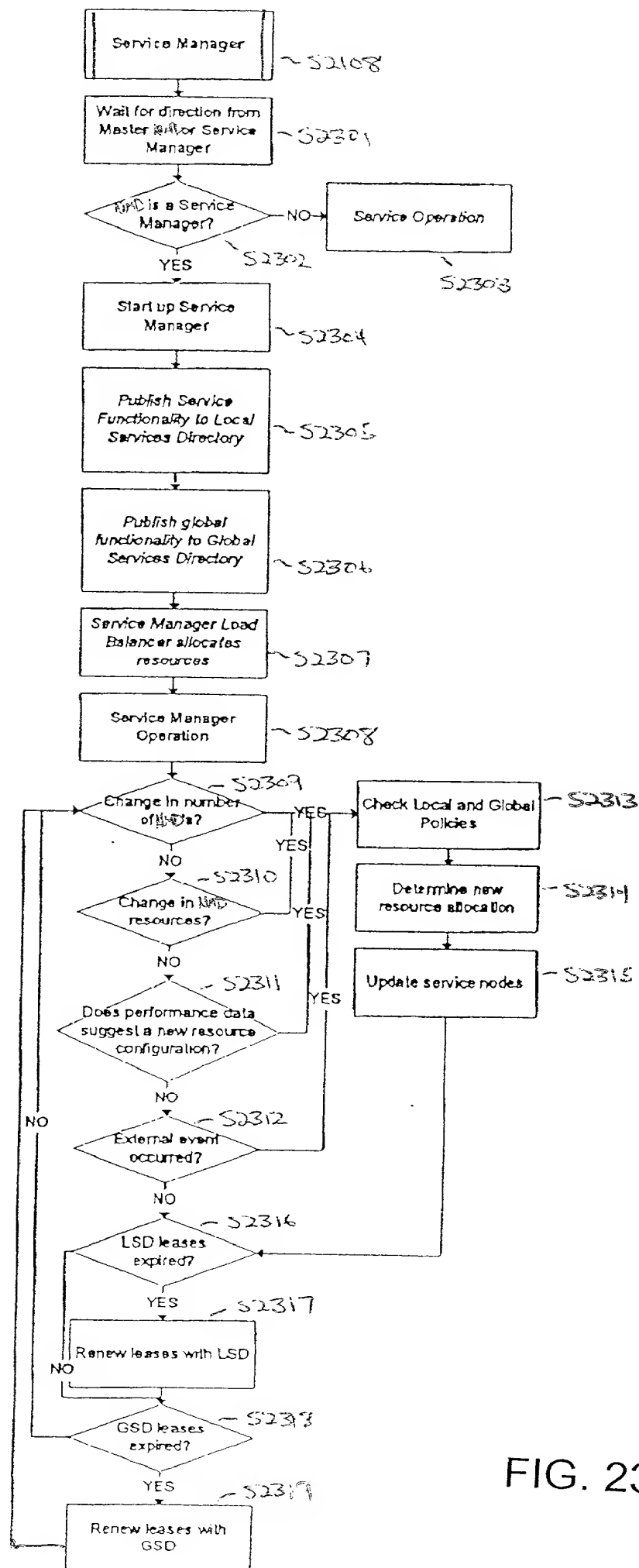


FIG. 23

```

graph TD
    S2401[AMD Node Disappearance] --> S2402["(Process in Local Service Directories)"]
    S2402 --> S2403[Remove any entries with expired leases]
    S2403 --> S2404{Is entry the Master NMD?}
    S2404 -- YES --> S2405[Process to create a new Master NMD]
    S2404 -- NO --> S2406{Is the entry a backup SD?}
    S2406 -- YES --> S2407[Process to create a new backup SD]
    S2406 -- NO --> S2408{Is the entry a Service Manager?}
    S2408 -- YES --> S2409[Inform Master NMD]
    S2408 -- NO --> S2410{Is the entry a NMD Service?}
    S2410 -- YES --> S2411[Inform all Service Managers]
    S2411 --> S2403
    S2404 -- NO --> NO_PATH[ ]
    S2406 -- NO --> NO_PATH
    S2408 -- NO --> NO_PATH
    S2410 -- NO --> NO_PATH
    NO_PATH -- NO --> S2403

```

FIG. 24

\$250i

52502

5

52504

52505

2505

52506

[illegible]